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2016 KSU Conference on Cybersecurity Education,
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Towards a Model of Senior Citizens' Motivation to Pursue Cybersecurity Awareness Training: Lecture-Based vs. Video-Cases Training

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Blackwood-Brown, Carlene G., "Towards a Model of Senior Citizens' Motivation to Pursue Cybersecurity Awareness Training: Lecture-Based vs. Video-Cases Training" (2016). *KSU Proceedings on Cybersecurity Education, Research and Practice*. 3.
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Abstract

Cyber-attacks on Internet users, and in particular senior citizens, who have limited awareness of cybersecurity, have caused billions of dollars in losses annually. To mitigate the effects of cyber-attacks, several researchers have recommended that the cybersecurity awareness levels of Internet users be increased. Cybersecurity awareness training programs are most effective when they involve training that focus on making users more aware so that they can identify cyber-attacks as well as mitigate the effects of the cyber-attacks when they use the Internet. However, it is unclear about what motivates Internet users to pursue cybersecurity awareness training so that they can identify as well as mitigate the effects of the cyber-attacks when they use the Internet. This work-in-progress study will empirically investigate what motivates a specific group of Internet users, that is, senior citizens, to pursue additional cybersecurity awareness training, after initial training is conducted. Contributions from this study will add to the body of knowledge on how to motivate Internet users to pursue additional training in cybersecurity, and thus, aid in the reduction of the billions of dollars in losses accrued to Internet users as a result of cyber-attacks. Senior citizens will also benefit in that they will be better able to identify and mitigate the effects of cyber-attacks. The recommendations from this work-in-progress study will also be significant to law enforcement in reducing the number of cases relating to cybersecurity issues amongst senior citizens, and thus, free up resources to fight other sources of cyber crime.

Disciplines

Information Security | Management Information Systems | Technology and Innovation

SUMMARY

Evidence from research indicates that significant financial losses have been accrued to governments, organizations, and Internet users because of limited awareness of cybersecurity countermeasures among the Internet users. Cyber-criminals can launch attacks on Internet users via attack vectors such as unsecured wireless networks and phishing attacks. This results in billions of dollars in fraudulent revenue to the cyber-criminals at the expense of Internet users who are not aware of those types of attacks.

Senior citizens are one of the most vulnerable groups of Internet users who are prone to cyber-attacks, and within the last decade, there has been a significant increase in Internet use among American senior citizens. A report from the Pew Research Center indicates that senior citizens had the greatest rate of increase in Internet usage (107% increase) over all the other age groups that were surveyed between 2000 and 2015. However, while using the Internet, senior citizens are being targeted and exploited, with one in five American senior citizen being a victim of financial fraud, costing more than \$2.6 billion per year. Phishing attacks pose serious threats to the private lives of these Internet users, including, but not limited to compromising of confidential information, and identity theft. One of the common fears of senior citizens is identity theft, and coupled with their limited awareness of cybersecurity countermeasures, they feel overwhelmed, frustrated, and demotivated when they use the Internet. After being victims of identity theft, some senior citizens suffer devastating effects, ranging from loss of all their life savings, feelings of shame for being victims, and exacerbated illnesses to include premature death. Therefore, cybersecurity awareness is essential for them as a countermeasure strategy to combat the cyber-attacks that they face.

In spite of the losses caused by cyber-attacks, and the attempts at providing cybersecurity awareness, it appears that it is still unclear about what motivates Internet users to pursue cybersecurity awareness training so that they can identify as well as mitigate the effects of new upcoming cyber-attacks. This work-in-progress study answers the call from several researchers to increase the awareness of cybersecurity countermeasures of Internet users so that they can stay up-to-date on the available cybersecurity tools and procedures that can protect their personal data, as well as themselves whenever they use the Internet. This will be done by empirically assessing a model of some contributing factors (cybersecurity awareness, computer self-efficacy, and perceived risk of identity theft) on the

motivation of senior citizens to pursue additional cybersecurity awareness training. Groups of senior citizens will receive cybersecurity awareness training using different delivery methods. Measurements of each contributing factor will be taken before the training as well as after, up to a period of four weeks. The measurements will then be statistically analyzed, and discussed. A better understanding of the types of cybersecurity awareness countermeasure training that can contribute to the motivation of Internet users to pursue training to reduce the effects of cyber-attacks will be provided.